

In the Claims

1-17. (Cancelled)

18. (Currently Amended) A plasma cutter comprising:

a power source configured to condition raw power into a form usable by a plasma cutting process;

a pressurized gas source;

a torch connected to the power source and the pressurized gas source, and configured to effectuate the plasma cutting process;

means for detecting a type and compatibility of consumable disposed within the torch; and

means for setting an operating parameter of the plasma cutting process, based on the type of consumable detected in addition to preventing initiation of the plasma cutting process based on an incompatible consumable.

19. (Original) The plasma cutter of claim 18 further comprising means for automatically controlling the power source based on at least the type of consumable.

20. (Original) The plasma cutter of claim 19 wherein the type of consumable includes a one-piece consumable.

21. (Currently Amended) A plasma cutting system comprising:

a power source;

a torch connected to the power source and having a plasma torch consumable component connected thereto; and

a controller configured to automatically determine a type of plasma torch consumable connected to the torch and configured to (1) adjust an operating parameter of the power source and (2) allow initiation prevention of the plasma cutting process, based on the type of plasma torch consumable component.

22. (Previously Presented) The system of claim 21 wherein the power source includes a menu window and the controller is further configured to display the type of plasma torch consumable component on the menu window.

23. (Previously Presented) The system of claim 21 wherein the controller is configured to adjust one of cutting voltage and cutting current based on the type of plasma torch consumable component.

24. (Previously Presented) The system of claim 23 wherein the operating parameter includes at least an amperage of an output current of the power source.

25. (Previously Presented) The system of claim 23 further comprising a detector circuit configured to transmit feedback to the controller indicative of physical characteristics of the plasma torch consumable component connected to the torch.

26. (Previously Presented) The system of claim 25 wherein the detector circuit includes a sensor designed to measure a light reflectivity of an outer surface of the plasma torch consumable component.

27. (Previously Presented) The system of claim 25 wherein the detector circuit includes a sensor designed to measure a resistance of a pin of the plasma torch consumable component connecting the plasma torch consumable component to the torch.

28. (Previously Presented) The system of claim 25 wherein the detector circuit includes an induction circuit designed to output a current proportional to a magnetic field generated by the plasma torch consumable component.

29. (Previously Presented) The system of claim 25 wherein the detector circuit includes a sensor designed to measure sound reflectivity of the plasma torch consumable component.

30. (Currently Amended) A method of defining a plasma cutting process, the method comprising:

detecting presence of a [fixed] component in a plasma torch;
receiving feedback of sensed characteristics of the [fixed] component;

allowing initiation prevention of the plasma cutting process based on the component detected; and
automatically adjusting an operating parameter of a plasma cutting process to control cutting based on the sensed characteristic of the [fixed] component.

31. (Currently Amended) The method of claim 30 further comprising measuring a resistance between the [fixed] component and the plasma torch, comparing a value of the resistance to a look-up table, and determining a type of the [fixed] component therefrom.

32. (Currently Amended) The method of claim 30 further comprising measuring a surface light reflectivity of the [fixed] component, comparing a value of surface light reflectivity to a look-up table, and determining [fixed] component type therefrom.

33. (Previously Presented) The method of claim 30 further comprising measuring a magnetic field induced current in a detector coil, comparing a value of the current to a look-up table, and determining consumable type therefrom.

34. (Previously Presented) The method of claim 30 further comprising measuring surface sound reflectivity of the consumable, comparing a value of surface sound reflectivity to a look-up table, and determining consumable type therefrom.

35. (Currently Amended) The method of claim 30 wherein the [fixed] component includes a cutting or a gouging component.

36. (Previously Presented) The method of claim 30 wherein the operating parameter includes at least one of power source output current and gas pressure.

37. (Currently Amended) The method of claim 30 further comprising displaying an indicator of [fixed] component type on a power source display.